# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : BABCOCK HITACHI KK

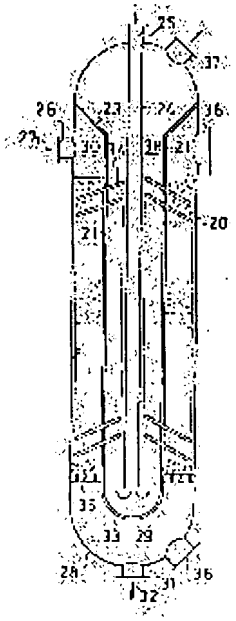
(72)Inventor : ARISAKI KENJI

## (54) REACTOR WITH HEAT PIPE

(57)Abstract:

PURPOSE: To reduce installation cost, in a reactor such as a shift converter used in an ammonia synthesis process, by packing the outside annular part in a cylindrical reaction vessel concentrically partitioned by partition plate with a catalyst and mounting heat pipes in said reaction vessel.

CONSTITUTION: Reaction gas 27 is introduced into the outside annular part 30 in a reaction vessel main body 20 from an inlet nozzle 26 and uniformly distributed to the upper surface of a catalyst bed 22 and generates exothermic reaction in a process downwardly flowing through the catalyst bed 22 while reaction heat is successively absorbed by heat pipes 34 and irreversibly transmitted to the heat exchange medium in an inside cylindrical part 38. The gas having received reaction passes the support plate 35 provided to the lower part of the catalyst bed 22 to be exhausted to a gas chamber 29 and taken out to the outside as reaction gas from said chamber 29 through an outlet nozzle 31. Water is supplied into the inside cylindrical part 21 from a water falling pipe nozzle 25 through a water falling pipe 25 and supplied to a boiler system while successively heated by the heat pipes 34.



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